

A *Manilkara* Found on Oahu, Hawaii

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AMONG HIS STUDIES of the Sapotaceae, Dr. H. J. Lam has made at least two references to a species of *Manilkara* found on Oahu, Hawaii. In one reference (*Buitenzorg Jard. Bot. Bul.*, Ser. III, 7: 241, 1925) he published the description of it as a new species, *M. emarginata* H. J. Lam, without illustration. In another reference (*Blumea*, 4: 342, 1941) he repeated the description, including it with descriptions of 14 other species, and listing it as one of three incompletely known, as flowers were lacking. In the first reference, Dr. Lam states: "I discovered in the collections of the Buitenzorg Herbarium a specimen from Oahu, Sandwich Islands, which seems to belong to this genus [*Manilkara*] and seems worthy to be described here." The type specimen was in fruit, and it was collected by H. M. Curran, a forester of Manila, in April, 1911. But contrary to Dr. Lam's belief, this specimen evidently was not collected from a native tree of Oahu, but was probably taken from an introduced, cultivated tree in a public garden on Oahu that is noted for its varied collection of introduced trees. No native species of *Manilkara* is known in Hawaii.

Recently I rediscovered this species, and very likely the same tree, in Foster Gardens, Honolulu, Oahu, on February 11, 1947, when it was bearing both flowers and fruit. It was called to my attention by Mr. Gordon Pearsall, who wished to have it identified. It is a single tree, seemingly the original introduction and only specimen in Hawaii. It is about 8 meters high, with a spread of 15 meters at the crown; the diameter of the trunk is about 50 cm. near the base, where a few large branches rise at angles of about

45°. The bark of trunk and lower branches is gray and rough, and is deeply and regularly furrowed. The upper branches are nearly smooth and bear numerous branchlets or twigs. As each twig tip bears a cluster of leaves about 5 to 15 cm. long, the leafy canopy is dense. The leaves are shiny, dull green above, lighter beneath, oval to obovate, emarginate. The sap of the tree is milky. The comparatively thick, yellowish, white-milky pulp of the small, brown, one-seeded fruit has a pleasing sweetish flavor.

So far as leaves and fruit are concerned, the only parts of the tree available to Lam, this tree fits well into his description of *M. emarginata*. As many of the plants in Foster Gardens were brought from different parts of the world, especially from the Far East, Malaya, and Malaysia, and records were not always preserved, it has not been possible to locate the home of each plant. As this *Manilkara* is well grown, it may have been collected as a seed in 1865-1866 by the botanist Dr. William Hillebrand, who at that time collected plants in and near Hong Kong and in Java. Or it may have been brought by some later collector.

The genus includes about 74 species, according to Dr. Lam, known from Central America, Africa, Asia, and islands of the Pacific. *M. emarginata* is said by Lam to be related, apparently, to *M. kauki* (L.) Dub., the distribution of which is southeastern Asia, Malaysia, the Philippines, and northern Australia. But analysis of the flowers indicates a much closer relationship to *M. hexandra* (Roxb.) Dub., distributed in central India, Ceylon, Siam, Indo-China, and Hainan. The possibility is thus suggested that one or more of these regions is the home of *M. emarginata*. In fact, the descriptions

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of these two species agree so nearly that I recommend reducing *M. emarginata* to a synonym of *M. hexandra*, although *M. hexandra* is described as having slightly longer petal appendages and styles, and slightly shorter petals and fruit than *M. emarginata*. The somewhat variable leaves of both species are similar in shape and size and minute reticulations (see *Blumea*, 4: 332, 340, and Fig. 5, 1941).

To supplement Dr. Lam's original description of *M. emarginata*, here reduced to a synonym of *M. hexandra*, I figure a leaf, flower, and fruit (Fig. 1). I describe the flower, which was not seen by him, as follows:

Commonly 3 (1+) flowers develop at leaf axils on pedicels that are green and scaly and about 1 cm. long. The 6 sepals are in 2 rows, reddish brown, deltoid, reflexed in fruit. The 3 outer sepals are 3 mm. long, thick, smooth within, covered outside with tan scales, and edged with fine tomentum. The 3 inner sepals are thinner, smaller, and narrower than the outer ones, smooth within, covered outside and edged with fine tomentum. The corolla is smooth, with tube $0.75 \pm$

mm. long. The 6 petals are thin, light brown tinted when dry, narrow oblong, 4 mm. long, the edges revolute, each petal accompanied by 2 ovate appendages nearly equaling it. Stamens 6; filaments nearly 3 mm. long, widest at base and tapering to narrow tip; anthers nearly 2 mm. long; staminodes 6, rounded, edged commonly with 2 or 3 teeth, which may or may not have long-tailed tips. Ovary 1 mm. high, tomentose, 10-celled; disk smooth, nearly 1 mm. high; style 3.7 mm. long, smooth; stigma a cleft disk, slightly wider than the style tip.

The discovery of this tree in Foster Gardens and its identification with a species of the Eastern Hemisphere has a further significance. Other specimens collected by H. M. Curran on Oahu in April, 1911, and distributed to some herbaria may also have come from Foster Gardens. This may be true of a *Vitex* collected by Curran and described by Lam as *V. hawaiiensis* H. J. Lam (*Buitenzorg Jard. Bot. Bul.*, Ser. III, 3: 59-60, 1921). Later (*idem*, 5:175, 1922), Lam withdrew this name and stated that he believed the plant to be a Mexican species, *V. mollis* Kunth.

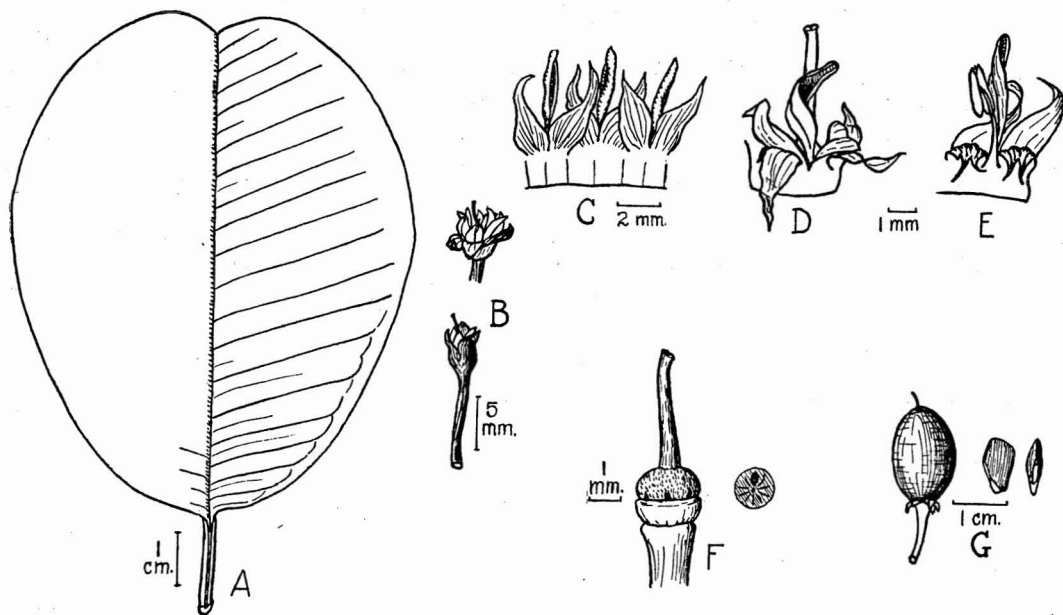


FIG. 1. *Manilkara hexandra*. A, leaf; B, flower and bud; C, part of corolla, outside: 3 petals and 3 pairs of appendages; D, 1 petal, 2 pairs of appendages, with pistil; E, part of corolla, inside: petal, 1 pair of appendages, 1 stamen, 2 staminodes; F, pistil, from side and in cross section; G, fruit, seed from side and front.